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ABSTRACT

A study was conducted to project enrollment figures by age cohort groups at Harford Community College (HCC) for the period 1982 through 1986. Projections were obtained by determining the ratio of the students enrolled at HCC to the number of persons living in Harford County through an analysis of historical data detailing college and county population parameters. Fall 1981 figures were used as the basis for enrollment projections by credit hours carried, sex, full-time equivalents (FTE's), and total headcount. Projections for the 1982-1986 period included the following: (1) the student headcount would rise by 7.3% between 1981 and 1986; (2) female students would continue to represent about 60% of the student body with their numbers increasing by 6.2% compared to 5.7% for males; (3) part-time students would continue to form about 70% of the student population, growing by 9.4% while the number of full-time students would increase by 2.3%; (4) student numbers in the age groups 17-19 and 31-35 would decline and those for age groups 20-25, 26-30, 36-40, and 41 and over would increase; and (5) FTE's in 1986 would represent a 5.2% increase over the 1981 figure. Detailed tables provide actual headcount for 1978 through 1981 and projected figures for 1982 through 1986 with respect to total, male, female, and full-/part-time headcount and total, full-time, and part-time FTE's. Appendices include interim and updated projections of population trends, HCC's registrar's report on 1978-81 enrollments, and methodological notes. (HB)

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FIVE-YEAR CREDIT ENROLLMENT PROJECTIONS BY AGE COHORT GROUPS

HARFORD COMMUNITY COLLEGE

Fall Semesters, 1982–1986

Prepared by

Office of Institutional Research

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May, 1982

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TABLE OF CONTENTS

	Page
LIST OF TABLES	1-2
NARRATIVE	
Introduction	3-4
Framework for Enrollment Projections	5-6
Summary	7
Total Headcount Projections	8
Tables 1-4	9-12
Female Headcount Projections	13
Tables 5-8	14-17
Male Headcount Projections	18
Tables 9-12	19-22
Full-Time/Part-Time Headcount	23-24
Tables 13-19	25-31
Total, Full-Time, and Part-Time FTE's	32-33
Tables 20-28	34-42
APPENDICES	
Appendix A--Harford Community College Registrar's Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981	42-45
Appendix B--Interim Projections by Age, Race and Sex, Maryland Department of State Planning, July 31, 1981	46-50
Appendix C--Updated Interim Projections, Maryland Department of State Planning, March 30, 1982	51-53
Appendix D--Methodological Notes	54-55

LIST OF TABLES

Table Number	Title	Page
1	Harford County Total Population by Age Cohort Groups 1978-1990	9
2	Total Market Share by Age Cohort Groups Fall Semesters 1978-1981	10
3	Actual and Projected Total Headcount by Age Cohort Groups, Fall Semesters 1978-1986	11
4	Actual and Projected Increase in Total Enrollments at Harford Community College, Fall Semesters 1978-1986	12
5	Harford County Female Population Projections by Age Cohort Groups 1978-1990	14
6	Female Enrollment Market Share by Age Cohort Groups, Fall Semesters 1978-1981	15
7	Actual and Projected Female Headcount by Age Cohort Groups, Fall Semesters 1978-1986	16
8	Actual and Projected Increase in Female Enrollments at Harford Community College, Fall Semesters 1978-1986	17
9	Harford County Male Population Projections by Age Cohort Groups 1978-1990	19
10	Male Enrollment Market Share by Age Cohort Groups, Fall Semesters 1978-1981	20
11	Actual and Projected Male Headcount by Age Cohort Gruops, Fall Semesters 1978-1986	21
12	Actual and Projected Increase in Male Enrollments at Harford Community College, Fall Semesters 1978-1986	22
13	Full-Time Enrollment Market Share by Age Cohort Groups, Fall Semesters 1978-1981	25
14	Actual and Projected Full-Time Headcount by Age Cohort Groups, Fall Semesters 1978-1986	26
15	Actual and Projected Increase in Full-Time Enrollments at Harford Community College, Fall Semesters 1978-1986	27
16	Part-Time Enrollment Market Share by Age Cohort Groups, Fall Semesters 1978-1981	28

LIST OF TABLES (CONTINUED)

Table Number	Title	Page
17	Actual and Projected Part-Time Headcount by Age Cohort Groups, Fall Semesters 1978-1986	29
18	Actual and Projected Increase in Part-Time Headcount at Harford Community College, Fall Semesters 1978-1986	30
19	Five-Year Change in Enrollments for Total, Full-Time, and Part-Time Headcount 1981-1986	31
20	Average Credit Load by Age Cohort Groups Full-Time/Part-Time, Fall, 1981	34
21	Actual and Projected Total FTE's by Age Cohort Groups, Fall Semesters 1981-1986 . .	35
22	Actual and Projected Increase in Total FTE's at Harford Community College, Fall Semesters 1978-1986	36
23	Actual and Projected Full-Time FTE's by Age Cohort Groups, Fall Semesters 1981-1986	37
24	Actual and Projected Increase in Full-Time FTE's at Harford Community College, Fall Semesters 1978-1986	38
25	Actual and Projected Part-Time FTE's by Age Cohort Groups, Fall Semesters 1981-1986	39
26	Actual and Projected Increase in Part-Time FTE's at Harford Community College, Fall Semesters 1978-1986	40
27	Five-Year Change in Enrollments for Total, Full-Time, and Part-Time FTE's 1981-1986 .	41
28	Fiscal Years 1979-1987 Actual and Projected Increase in Total FTE's at Harford Community College	42

FIVE-YEAR CREDIT ENROLLMENT PROJECTIONS BY AGE COHORT GROUPS FALL SEMESTERS, 1982-1986 HARFORD COMMUNITY COLLEGE

Introduction

Forecasters predict a decline in the number of high school graduates by approximately 25 percent during the decade of the 80's which will cause enrollment stagnation or decline for many colleges. Especially hard hit will be the four-year institutions which depend almost exclusively upon the traditional college-age student. On the other hand, the community college sector is in a better position to counteract enrollment drops because of substantial age diversity among its student body. Indeed, older age sectors within the adult population are projected to show an increase and, consequently, enrollments within these age cohorts will in all likelihood increase. However, replacing each traditional age student lost with an older student would still yield an FTE drop because older students tend to enroll to a greater extent on a part-time basis.

Beyond the demographic characteristics of the population from which a college draws its students and the college's past enrollment track record, college enrollments are dependent upon several complex and changing factors. Current factors affecting future enrollments may differ substantially from factors which were operative in determining the enrollment of the present and past. Some factors may operate continuously over several years; others operate intermittently over a number of years; others operate for a short duration. Traditionally, collegiate enrollments have been primarily affected by the following variables: changes in the economy and the international situation, birth rates, veteran enrollments, educational loans, grants to institutions

and individuals, high school enrollments, geographical migration, selective service drafts and deferments, interinstitutional competition, changing social attitudes toward the role of women and minorities, and changing occupational requirements.

Framework for Enrollment Projections

Of the several enrollment projection techniques normally employed to forecast college enrollments, the ratio method is best suited for projecting Harford Community College's enrollment over the next five years. This method determines the ratio of the number of persons enrolled at Harford Community College to the number of persons living in Harford County. To compute this ratio, therefore, it is necessary to examine historical data detailing college and county population parameters.

Harford Community College Registrar's Reports and the Maryland Department of State Planning Interim Population Projections provide this necessary information (see Appendix A, B, and C). In addition, the Department of State Planning projects population parameters to 1990. Therefore, if a determination can be made as to expected future enrollment ratios, projected student headcount can readily be determined by multiplying the ratio into the projected population parameters.

To determine future ratios (often referred to as market share), the median, most recent, mean, or linear regressed ratio is projected. The median, most recent, or mean ratio generally represents a middle level projection since the projection of college attendance is based upon a constant percentage of the college-age population. The linear regressed ratio represents a high or low level projection since trends continue in either an upward or a downward direction.

In the analysis that follows, the most recent year, the Fall of 1987, was used as the basis to project future years (see Appendix D). Projections were made on the basis of credit hours carried, sex, and FTE's, as well as by total headcount.

A commentary and a series of tables is provided for each section. The data is also organized in a manner that facilitates additional manipulating as may be deemed appropriate by various facets of the College community.

However, these projected figures are to be considered only as baseline data since enrollment trends are always subject to factors not necessarily predictable by past experience. Therefore, when interpreting the reported projections, personal judgment and additional factors affecting enrollment must also be considered.

Some factors that may affect future enrollments at Harford Community College include the new federal attitude toward higher education, increasing unemployment, an effective marketing and admissions program, an expanded Aberdeen Proving Ground effort, an honors program, increased retention vis a vis the developmental studies, growing fields such as data processing and electronics, increased participation among senior age groups, increased competition with four-year schools, and fluctuations in the state funding formula.

It is the intent of the Office of Institutional Research to distribute updated versions of these projections on an annual basis. It is hoped that these projections will support HCC's planning efforts throughout the institution.

Summary

Over the next five years, growth in FTE's and headcount at Harford Community College can best be characterized as slow and steady. Total Fall headcount is projected to grow to 4757 by 1986, a 7.3 percent increase from 4435 in 1981. This growth will occur primarily in the first four years at an approximate 1.5 percent rate followed by a flat trend in 1986.

By sex, female students will continue to represent about 60 percent of the student body and by credit hours, part-time students will continue to hold about a 70 percent share of the total. Both the female and part-time categories will grow faster than their counterparts with females showing a slight edge over males, and part-timers showing a substantial gain over full-timers. By 1986, females will grow by 164 to 2809, a 6.2 percent increase from 2645, contrasted to males who will grow by 102 to 1892, a 5.7 percent increase over 1790. Part-timers will grow by 295 to 3426, a 9.4 percent growth from 3131; while full-time students will grow by 30 to 1336, a 2.3 percent increase from 1306.

However, an examination of the above trends by age cohort groups indicates growth for some cohorts and maintenance or decline for others. In general, the 17-19 and the 31-35 cohorts will decline and the 20-25, 26-30, 36-40, and 41 and over will increase. The differences among some age cohort groups are quite pronounced.

Translating this growth in headcount to the growth in FTE's yields a lesser rate due to the greater proportional growth of part-time students--counted at about one-third of a full-time student. By 1986 FTE's will grow by 57.43 to 1156.29, a 5.2 percent growth from 1098.86 in 1981. This 5.2 percent FTE growth is contrasted to the 7.3 percent increase in total headcount enrollment. FTE's will grow at about 1.4 percent until 1986 when it will drop by .5 percent. FTE's for FY 1987 (Summer and Fall 1986, Spring 1987) will equal 2444.9, a 126 FTE or 5.4 percent increase over the FY 1982 figure of 2318.9.

TOTAL HEADCOUNT PROJECTIONS

Table 1 shows Harford County's population by age cohort groups, 1978-1990. Harford County is projected to grow by 10.8 percent from 1981 to 1986 and by 17.9 percent from 1981 to 1990. However, an examination of this trend by age cohort groups indicates growth for some and decline for others. Specific projections are consistent decline for the 17-19 and 31-35 groups, consistent growth for the 20-25, 26-30, 41 and over groups, and growth then decline for the 36-40 group.

Table 2 details the percentage of Harford County residents by age cohort that attend Harford Community College (referred to as market share). Harford Community College's overall market share has been slowly increasing from 3.7 in 1978 to 4.2 in 1981. The market share by age cohort varies.

Table 3 shows actual headcount from 1978 to 1981 and projected headcount (based on the 1981 market shares) from 1982 to 1986. The overall trend indicates a 7.3 percent increase while trends by age cohort vary widely.

Table 4 details the actual year by year percent change from 1978-1981 and the projected annual change for 1982-1986. Total headcount is estimated to grow at around 1.5 percent until 1986 when it will remain flat.

TABLE 1
HARFORD COUNTY TOTAL POPULATION BY AGE COHORT GROUPS
1978-1990

Ages	1978	1979	1980	1981	1982	1983	1984	1985	1986	Percent Change 1981-1986	1990	Percent Change 1981-1990
17-19	9513	9397	9281	9165	9049	8933	8817	8699	8458	- 7.7	7492	-18.3
20-25	10292	11169	12046	12923	13800	14677	15554	16431	16234	+25.6	15446	+19.5
26-30	11887	11861	11835	11809	11783	11757	11731	11704	12586	+ 6.6	16114	+36.5
31-35	13848	13593	13338	13083	12828	12573	12318	12062	12007	- 8.2	11788	- 9.9
36-40	11089	11203	11617	12031	12445	12859	13273	13689	13404	+11.4	12262	+ 1.9
41-over	42361	43872	45383	46894	48405	49916	51427	52936	54700	+16.7	61754	+31.7
Total	98690	101095	103500	105905	108310	110715	113120	115521	117389	+10.8	124856	+17.9

Source: Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 2
TOTAL MARKET SHARE BY AGE COHORT GROUPS
FALL SEMESTERS
1978-1981

(Percentages)

Ages	1978	1979	1980	1981
17-19	10.3	11.2	12.9	12.8
20-25	9.2	9.3	8.4	8.8
26-30	4.7	4.9	5.0	5.4
31-35	3.2	3.7	4.0	4.6
36-40	2.8	3.0	2.9	3.0
41-over	1.1	1.1	1.2	1.1
Total	3.7	3.9	4.0	4.2

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 3
ACTUAL AND PROJECTED TOTAL HEADCOUNT
BY AGE COHORT GROUPS, FALL SEMESTERS
1978-1986

Ages	ACTUAL 1978	1979	1980	1981	PROJECTED 1982	1983	1984	1985	1986	Percent Change 1981-1986
17-19	979	1055	1196	1174	1159	1144	1129	1114	1083	- 7.8
20-25	943	1034	1012	1133	1210	1287	1364	1441	1424	+25.7
26-30	562	578	587	637	635	633	632	631	678	+ 6.4
31-35	441	501	528	602	590	578	567	555	552	- 8.3
36-40	308	331	333	361	373	386	398	411	402	+11.4
41-over	443	474	524	528	547	564	581	598	618	+17.0
Total	3676	3973	4180	4435	4514	4592	4671	4750	4757	+ 7.3

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 4
ACTUAL AND PROJECTED INCREASE IN TOTAL ENROLLMENTS
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	TOTAL ENROLLMENT	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	3676	+ 2.3
1979	3973	+ 8.1
1980	4180	+ 5.2
1981	4435	+ 5.3
	PROJECTED	
1982	4514	+ 1.2
1983	4592	+ 1.7
1984	4671	+ 1.7
1985	4750	+ 1.7
1986	4757	+ .1
PERCENT CHANGE 1981-1986 = + 7.3		

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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FEMALE HEADCOUNT PROJECTIONS

Table 5 shows Harford County's female population by age cohort groups, 1978-1990. Harford County's female population is projected to grow by 11 percent from 1981 to 1986 and by 18.2 percent from 1981 to 1990. However, an examination of this trend by age cohort groups indicates growth for some and decline for others.

Table 6 details the percentage of Harford County's female residents by age cohort that attend Harford Community College (referred to as market share). Harford Community College's overall female market share has been slowly increasing from 4.2 in 1978 to 5.0 in 1981. The market share by age cohort varies.

Table 7 shows actual female headcount from 1978 to 1981 and projected headcount (based on 1981 market shares) from 1982 to 1986. The overall trend indicates a 6.2 percent increase while trends by age cohort vary widely.

Table 8 details the actual year by year percent change from 1978-1981 and the projected annual change from 1982-1986. Female headcount is estimated to grow at around 1.5 percent until 1986 when it will remain flat.

TABLE 5
HARFORD COUNTY FEMALE POPULATION PROJECTIONS BY AGE COHORT GROUPS
1978-1990

Ages	1978	1979	1980	1981	1982	1983	1984	1985	1986	Percent Change 1981-1986	1990	Percent Change 1981-1990
17-19	4262	4246	4230	4214	4198	4182	4166	4150	4034	- 4.3	3569	-15.3
20-25	5138	5452	5766	6080	6394	6708	7022	7337	7290	+20.0	7103	+16.9
26-30	6012	6021	6030	6039	6048	6057	6066	6073	6380	+ 5.6	7608	+26.0
31-35	7027	6903	6779	6655	6531	6407	6283	6157	6154	- 7.5	6141	- 7.7
36-40	5409	5626	5834	6051	6268	6485	6702	6920	6783	+12.1	6233	+ 3.0
41-over	21763	22578	23393	24208	25023	25838	26653	27469	28433	+17.5	32289	+33.4
Total	49611	50806	52032	53247	54462	55677	56892	58106	59074	+11.0	62943	+18.2

Source: Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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14

TABLE 6
FEMALE ENROLLMENT MARKET SHARE BY AGE COHORT GROUPS
FALL SEMESTERS
1978-1981

(Percentages)

Ages	1978	1979	1980	1981
17-19	13.1	14.2	15.1	14.9
20-25	10.1	10.6	10.0	9.9
26-30	4.5	5.4	6.1	6.6
31-35	4.0	4.7	5.3	6.1
36-40	3.7	4.1	4.4	4.3
41-over	1.2	1.3	1.3	1.4
Total	4.2	4.6	4.8	5.0

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March 1982

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TABLE 7
ACTUAL AND PROJECTED FEMALE HEADCOUNT
BY AGE COHORT GROUPS, FALL SEMESTERS
1978-1986

Ages	ACTUAL 1978	1979	1980	1981	PROJECTED 1982	1983	1984	1985	1986	Percent Change 1981-1986
17-19	557	605	639	627	626	623	621	618	601	- 4.1
20-25	561	577	575	603	633	664	695	726	722	+20.0
26-30	269	327	367	398	399	400	400	401	421	+ 5.8
31-35	281	322	358	406	398	391	383	376	375	- 7.6
36-40	200	229	256	261	270	279	288	298	292	+11.9
41-over	269	287	314	350	350	362	373	385	398	+13.7
Total	2094	2347	2509	2645	2676	2719	2760	2804	2809	+ 6.2

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
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16

TABLE 8
ACTUAL AND PROJECTED INCREASE IN FEMALE ENROLLMENTS
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	FEMALE ENROLLMENT	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	2097	+ 4.2
1979	2347	+12.0
1980	2509	+ 7.0
1981	2645	+ 5.4
	PROJECTED	
1982	2676	+ 1.2
1983	2719	+ 1.6
1984	2760	+ 1.5
1985	2804	+ 1.6
1986	2809	+ .2

PERCENT CHANGE 1981-1986 = + 6.2

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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MALE HEADCOUNT PROJECTIONS

Table 9 shows Harford County's male population by age cohort groups, 1978-1990. Harford County's male population is projected to grow by 10.7 percent from 1981 to 1986 and 17.6 percent from 1981 to 1990. However, an examination of this trend by age cohort groups indicates growth for some and decline for others.

Table 10 details the percentage of Harford County's male residents by age cohort that attend Harford Community College (referred to as market share). Harford Community College's overall market share has remained flat ranging from 3.2 to 3.4. The market share by age cohort varies.

Table 11 shows actual male headcount from 1978 to 1981 and projected headcount (based on the 1981 market shares) from 1982 to 1986. The overall trend indicates a 5.7 percent increase while trends by age cohort vary widely.

Table 12 details the actual year by year percent change from 1978-1981 and the projected annual change from 1982-1986. Total headcount is flat in 1982 and 1986 and grows at about 2 percent in the interim years.

TABLE 9
HARFORD COUNTY MALE POPULATION PROJECTIONS BY AGE COHORT GROUPS
1978-1990

Ages	1978	1979	1980	1981	1982	1983	1984	1985	1986	Percent Change 1981-1986	1990	Percent Change 1981-1990
17-19	5251	5151	5051	4951	4851	4751	4651	4549	4424	-10.6	3923	-20.8
20-25	5154	5717	6280	6843	7406	7969	8532	9094	8944	+30.7	8343	+21.9
26-30	5875	5840	5805	5770	5735	5700	5665	5631	6206	+ 7.6	8506	+47.4
31-35	6821	6690	6559	6428	6297	6166	6035	5905	5853	- 9.0	5647	-12.2
36-40	5387	5585	5783	5981	6179	6377	6575	6769	6621	+10.7	6029	+ .8
41-over	20600	21295	21990	22685	23390	24075	24770	25467	26267	+15.8	29465	+29.9
Total	49088	50278	51468	52658	53848	55038	56228	57415	58315	+10.7	61913	+17.6

Source: Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 10
MALE ENROLLMENT MARKET SHARE BY AGE COHORT GROUPS
FALL SEMESTERS
1978-1981

(Percentages)

Ages	1978	1979	1980	1981
17-19	8.0	8.7	11.0	11.0
20-25	8.2	8.0	7.0	7.7
26-30	5.0	4.4	3.5	3.5
31-35	2.3	2.7	2.6	3.0
36-40	2.0	1.8	1.3	1.7
41-over	.8	.9	1.0	.8
Total	3.2	3.2	3.2	3.4

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March 1982

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TABLE 11

ACTUAL AND PROJECTED MALE HEADCOUNT
BY AGE COHORT GROUPS, FALL SEMESTERS
1978-1986

Ages	ACTUAL				PROJECTED					Percent Change 1981-1986
	1978	1979	1980	1981	1982	1983	1984	1985	1986	
17-19	422	450	557	547	534	523	512	500	487	-11.0
20-25	422	457	437	530	570	614	657	700	689	+30.0
26-30	293	251	220	239	201	200	198	197	217	- 9.2
31-35	160	179	170	196	189	185	181	177	176	-10.2
36-40	108	102	77	100	105	108	112	115	113	+13.0
41-over	174	187	210	178	187	193	198	204	210	+18.0
Total	1579	1626	1671	1790	1786	1823	1858	1893	1892	+ 5.7

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 12
ACTUAL AND PROJECTED INCREASE IN MALE ENROLLMENTS
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	MALE ENROLLMENT	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	1579	- .6
1979	1626	+3.0
1980	1671	+2.8
1981	1790	+7.1
	PROJECTED	
1982	1786	- .2
1983	1823	+2.1
1984	1858	+2.0
1985	1893	+2.0
1986	1892	- .1

PERCENT CHANGE 1981-1986 = + 5.7

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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FULL-TIME/PART-TIME HEADCOUNT

Table 13 details the percentage of Harford County residents by age cohort that attend Harford Community College full-time (referred to as market share). Harford Community College's overall full-time market share has remained flat since 1979. The market share trend by age cohort varies.

Table 14 shows actual headcount from 1978 to 1981 and projected headcount (based on the 1981 market shares) from 1982 to 1986. The overall trend indicates a 2.3 percent increase while trends by age cohort vary widely.

Table 15 details the actual year by year percent change from 1978-1981 and the projected annual change from 1982-1986. Total full-time headcount is estimated to grow at around 1 percent until 1986 when it will drop by 1.5 percent.

Table 16 details the percentage of Harford County residents by age cohort that attend Harford Community College part-time (referred to as market share). Harford Community College's overall market share has been slowly increasing from 2.70 in 1978 to 2.96 in 1981. The market share trend by age cohort varies.

Table 17 shows actual part-time headcount from 1978 to 1981 and projected headcount (based on the 1981 market shares) from 1982 to 1986. The overall trend indicates a 9.4 percent increase while trends by age cohort vary widely.

Table 18 details the actual year by year percent change from 1978-1981 and the projected annual change from 1982-1986. Total part-time headcount is estimated to grow at around 1.5 percent until 1986 when it will remain flat.

Table 19 shows the five-year change in enrollments for total, full-time, and part-time headcount. Overall, total headcount increased 7.3 percent full-time headcount 2.3 percent, and part-time headcount 9.4 percent.

TABLE 13
FULL-TIME ENROLLMENT MARKET SHARE BY AGE COHORT GROUPS
FALL SEMESTERS
1978-1981

(Percentages)

Ages	1978	1979	1980	1981
17-19	6.73	7.85	8.89	8.78
20-25	2.49	2.73	2.37	2.54
26-30	.55	.60	.66	.69
31-35	.19	.31	.33	.36
36-40	.20	.22	.28	.22
41-over	.05	.07	.07	.04
Total	1.04	1.20	1.25	1.23

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March 1982

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TABLE 14
ACTUAL AND PROJECTED FULL-TIME HEADCOUNT
BY AGE COHORT GROUPS, FALL SEMESTERS
1978-1986

Ages	ACTUAL				PROJECTED					Percent Change 1981-1986
	1978	1979	1980	1981	1982	1983	1984	1985	1986	
17-19	640	738	825	805	795	784	774	764	743	- 7.7
20-25	256	305	286	328	351	373	395	417	412	+25.6
26-30	65	71	78	81	81	81	81	81	87	+ 7.4
31-35	26	42	44	47	46	45	44	43	43	- 8.5
36-40	22	25	33	26	27	28	29	30	29	+11.5
41-over	21	32	30	19	19	20	21	21	22	+15.8
Total	1030	1213	1296	1306	1319	1331	1344	1356	1336	+ 2.3

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 15
ACTUAL AND PROJECTED INCREASE IN FULL-TIME ENROLLMENTS
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	FULL-TIME ENROLLMENT	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	1030	- 6.5
1979	1213	+17.8
1980	1296	+ 6.9
1981	1306	+ .8
	PROJECTED	
1982	1319	
1983	1331	+ .9
1984	1344	+ 1.0
1985	1356	+ .9
1986	1336	- 1.5

PERCENT CHANGE 1981-1986 = + 2.3

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 16
PART-TIME ENROLLMENT MARKET SHARE BY AGE COHORT GROUPS
FALL SEMESTERS
1978-1981

(Percentages)

Ages	1978	1979	1980	1981
17-19	3.41	3.38	4.00	4.04
20-25	6.67	6.53	6.03	6.24
26-30	4.21	4.28	4.30	4.71
31-35	3.03	3.37	3.63	4.24
36-40	2.60	2.73	2.58	2.78
41-over	1.01	1.01	1.09	1.09
Total	2.70	2.73	2.79	2.96

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March 1982

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TABLE 17
ACTUAL AND PROJECTED PART-TIME HEADCOUNT
BY AGE COHORT GROUPS, FALL SEMESTERS
1978-1986

Ages	ACTUAL				PROJECTED					Percent Change 1981-1986
	1978	1979	1980	1981	1982	1983	1984	1985	1986	
17-19	324	318	371	370	366	361	356	351	342	- 7.6
20-25	686	729	726	806	861	916	971	1025	1013	+25.7
26-30	500	507	509	556	555	554	553	551	593	+ 6.7
31-35	420	458	484	555	544	533	522	511	509	- 8.3
36-40	288	306	300	335	346	357	369	381	373	+11.3
41-over	426	442	494	509	528	544	561	577	596	+17.1
Total	2664	2760	2884	3131	3200	3265	3332	3396	3426	+ 9.4

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000

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TABLE 18
ACTUAL AND PROJECTED INCREASE IN PART-TIME HEADCOUNT
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	PART-TIME HEADCOUNT	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	2664	
1979	2760	+ 3.6
1980	2884	+ 4.5
1981	3131	+ 8.6
	PROJECTED	
1982	3200	+ 2.2
1983	3265	+ 2.0
1984	3332	+ 2.1
1985	3396	+ 1.9
1986	3426	+ .9
PERCENT CHANGE 1981-1986 = + 9.4		

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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5/32
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TABLE 19
FIVE-YEAR CHANGE IN ENROLLMENTS FOR TOTAL,
FULL-TIME, AND PART-TIME HEADCOUNT
1981-1986

Ages	Total Headcount Number	Total Headcount Percent	Full-Time Headcount Number	Full-Time Headcount Percent	Part-Time Headcount Number	Part-Time Headcount Percent
17-19	- 91	- 7.8	- 62	- 7.7	- 28	- 7.6
20-25	291	+25.7	84	+25.6	207	+25.7
26-30	41	+ 6.4	6	+ 7.4	37	+ 6.7
31-35	- 50	- 8.3	- 4	- 8.5	- 46	- 8.3
36-40	41	+11.4	3	+11.5	38	+11.3
41-over	90	+17.0	3	+15.8	87	+17.1
Total	322	+ 7.3	30	+ 2.3	295	+ 9.4

Note: Totals may differ an insignificant amount due to rounding process.

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March 1982

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TOTAL, FULL-TIME, AND PART-TIME FTE'S

Table 20 shows the average credit load carried by age cohort groups for full-time and for part-time students. In general, the younger the student, the greater the credit load carried for both full-time and part-time.

Table 21 shows actual FTE's from 1978 to 1981 and projected FTE's (based on 1981 average credit load by age cohort) from 1982 to 1986. The overall trend indicates a 5.2 percent increase while trends by age cohort vary widely.

Table 22 details the actual year by year percent change from 1978-1981 the the projected annual change from 1982-1986. Total FTE's are estimated to grow at around 1.5 percent until 1986 when it will remain flat.

Table 23 shows actual full-time FTE's from 1978 to 1981 and projected full-time FTE's (based on the average credit load by age cohort) from 1982 to 1986. The overall trend indicates a 2.0 percent increase while trends by age cohort vary widely.

Table 24 details the actual year by year percent change from 1978-1981 and the projected annual change from 1982-1986. Total full-time FTE's show no consistent trend.

Table 25 shows actual part-time FTE's from 1978 to 1981 and projected part-time FTE's (based on the average credit load by age cohort) from 1982 to 1986. The overall trend indicates a 9.1 percent increase while trends by age cohort vary widely.

Table 26 details the actual year by year percent change from 1978-1981 and the projected annual change from 1982-1986. Part-time FTE's are estimated to grow at around 2 percent until 1986 when it will drop to .7.

Table 27 shows the five-year change in FTE's for total, full-time, and part-time enrollments. Total FTE's will increase 5.2 percent with full-time at 2.0 percent and part-time at 9.1 percent.

Table 28 details the actual year by year percent change from FY 1979-FY 1982 and the projected annual change from FY 1983 to FY 1987. Total FTE's will increase at approximately 1.5 percent until FY 1987 when it will drop by .5 percent.

TABLE 20
AVERAGE CREDIT LOAD BY AGE COHORT GROUPS
FULL-TIME/PART-TIME, FALL, 1981

Ages	Full-Time	Part-Time
17-19	13.89	6.50
20-25	13.58	5.29
26-30	13.55	4.69
31-35	13.48	4.42
36-40	13.62	3.99
41-over	12.61	3.76

Source: Job STT600A Credit Hours by Descending Birth Date--04/14/82

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TABLE 21
ACTUAL AND PROJECTED TOTAL FTE'S BY AGE COHORT GROUPS
FALL SEMESTERS
1981-1986

Ages	Actual 1981	1982	1983	1984	1985	1986	Percent Change 1981-1986
17-19	453.88	447.39	441.21	435.49	429.78	418.11	- 7.9
20-25	290.40	310.71	330.36	350.02	369.50	365.13	+25.7
26-30	123.51	123.36	123.20	123.04	122.73	132.01	+ 6.9
31-35	102.89	100.82	98.75	96.68	94.61	94.31	- 8.3
36-40	56.40	58.28	60.19	62.25	64.29	62.78	+11.3
41-over	71.78	74.17	76.59	79.14	81.15	83.95	+17.0
Total	1098.86	1114.73	1130.30	1146.62	1162.06	1156.29	+ 5.2

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000
March, 1982

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TABLE 22
ACTUAL AND PROJECTED INCREASE IN TOTAL FTE'S
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	TOTAL FTE'S	PERCENT INCREASE (From Previous Year)
	A C T U A L	
1978	916	
1979	1012	+10.5
1980	1061	+ 4.8
1981	1099	+ 1.5
	P R O J E C T E D	
1982	1115	+ 1.4
1983	1130	+ 1.5
1984	1147	+ 1.4
1985	1162	+ 1.3
1986	1156	- .5
PERCENT CHANGE 1981-1986 = + 5.2		

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 23

ACTUAL AND PROJECTED FULL-TIME FTE'S BY AGE COHORT GROUPS
FALL SEMESTERS
1981-1986

Ages	Actual 1981	1982	1983	1984	1985	1986	Percent Change 1981-1986
17-19	373.71	368.09	362.99	358.36	353.73	344.01	- 7.9
20-25	148.27	158.89	168.84	178.80	188.76	186.50	+25.8
26-30	36.59	36.59	36.59	36.59	36.59	39.30	+ 7.4
31-35	21.12	20.67	20.22	19.77	19.32	19.32	- 8.5
36-40	11.80	12.26	12.71	13.17	13.62	13.17	+11.6
41-over	7.99	7.99	8.41	8.83	8.83	9.25	+15.8
Total	599.48	596.50	609.76	615.52	620.85	611.55	+ 2.0

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 24
ACTUAL AND PROJECTED INCREASE IN FULL-TIME FTE'S
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	FULL-TIME FTE'S	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	484	
1979	570	+ 1.8
1980	600	+ 5.3
1981	601	+ .2
	PROJECTED	
1982	597	- .7
1983	610	+ 2.2
1984	616	+ 1.0
1985	621	+ .8
1986	612	- 1.5
PERCENT CHANGE 1981-1986 = + 1.7		

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 25

ACTUAL AND PROJECTED PART-TIME FTE'S BY AGE COHORT GROUPS
FALL SEMESTERS
1981-1986

Ages	Actual 1981	1982	1983	1984	1985	1986	Percent Change 1981-1986
17-19	80.17	79.30	78.22	77.13	76.05	74.10	- 7.6
20-25	142.13	151.82	161.52	171.22	180.74	178.63	+25.7
26-30	86.92	86.77	86.61	86.45	86.14	92.71	6.7
31-35	81.77	80.15	78.53	76.91	75.29	74.99	- 8.3
36-40	44.60	46.02	47.48	49.08	50.67	49.61	+11.2
41-over	63.79	66.18	68.18	70.31	72.32	74.70	+17.1
Total	499.38	510.24	520.54	531.10	541.21	544.74	+ 9.1

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 26

ACTUAL AND PROJECTED INCREASE IN PART-TIME FTE'S
AT HARFORD COMMUNITY COLLEGE, FALL SEMESTERS
1978-1986

FALL	PART-TIME FTE'S	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1978	432	
1979	442	+ 2.3
1980	461	+ 4.5
1981	500	+ 8.2
	PROJECTED	
1982	510	+ 2.4
1983	521	+ 2.1
1984	531	+ 2.0
1985	541	+ 1.9
1986	545	+ .7
PERCENT CHANGE 1981-1986 = + 9.1		

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

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TABLE 27
FIVE-YEAR CHANGE IN ENROLLMENTS FOR TOTAL,
FULL-TIME, AND PART-TIME FTE'S
1981-1986

Ages	Total FTE's Number	Percent	Full-Time FTE's Number	Percent	Part-Time FTE's Number	Percent
17-19	-35.77	- 7.9	-29.70	- 7.9	- 6.07	- 7.6
20-25	74.73	+25.7	38.23	+25.8	36.50	+25.7
26-30	8.50	+ 6.9	2.71	+ 7.4	5.79	6.7
31-35	- 8.58	- 8.3	- 1.80	- 8.5	- 6.78	- 8.3
36-40	6.38	+11.3	1.37	+11.6	5.01	+11.2
41-over	12.17	+17.0	1.26	+15.8	10.91	+17.1
Total	57.43	5.2	12.07	+ 2.0	45.36	+ 9.1

Note: Totals may differ an insignificant amount due to rounding process.

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March 1982

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TABLE 28
FISCAL YEARS 1979-1987
ACTUAL AND PROJECTED INCREASE IN TOTAL FTE'S
AT HARFORD COMMUNITY COLLEGE

FISCAL YEAR	TOTAL FTE'S	PERCENT INCREASE (From Previous Year)
	ACTUAL	
1979	2020.9	
1980	2138.8	+5.8
1981	2253.5	+5.4
1982	2318.9	+2.9
	PROJECTED*	
1983	2357.0	+1.6
1984	2389.9	+1.4
1985	2424.5	+1.4
1986	2457.1	+1.3
1987	2444.9	- .5
PERCENT CHANGE 1981-1986 = + 5.4		

Sources: Registrar Reports--Fall 1978, Fall 1979, Fall 1980, Fall 1981
Department of State Planning Interim Population Projections by Age, Race and Sex, 1980-2000, March, 1982

*Projections based on a Fall to Year Credit Multiplier of 2.114434 calculated from FY 1982 values

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APPENDIX A

HARFORD COMMUNITY COLLEGE
AGE DISTRIBUTION
FALL 1978 10/12/78

MI0550
20

AGE	FULL-TIME DAY M	FULL-TIME DAY F	FULL-TIME EVE M	FULL-TIME EVE F	FULL-TIME TOT M	FULL-TIME TOT F	PART-TIME DAY M	PART-TIME DAY F	PART-TIME EVE M	PART-TIME EVE F	PART-TIME TOT M	PART-TIME TOT F	COMBINED DAY M	COMBINED DAY F	COMBINED EVE M	COMBINED EVE F	TOT M	TOT F	GRAND TOTAL	PERCENT OF TOTAL COUNT
UNDER 18	23	53	0	1	28	54	8	33	18	22	26	55	31	86	18	23	49	109	159	4.6%
18	131	160	1	0	132	160	22	32	13	20	35	52	153	192	14	20	167	212	379	10.9%
19	128	121	3	0	131	121	20	42	31	41	51	83	148	163	34	41	182	204	386	11.1%
20	53	53	1	2	54	55	19	39	32	30	51	69	72	92	33	32	105	124	229	6.6%
21 - 25	61	76	1	2	62	78	67	118	164	171	231	289	128	194	165	173	293	367	660	19.1%
26 - 30	25	28	9	1	34	29	50	79	192	145	242	224	75	107	201	146	276	253	529	15.3%
31 - 35	4	21	0	0	4	21	23	121	124	123	147	244	27	142	124	123	151	265	416	12.0%
36 - 40	8	13	0	0	8	13	19	74	75	101	94	175	27	87	75	101	102	188	290	8.4%
41 - 45	4	5	0	0	4	5	13	47	41	75	54	122	17	52	41	75	58	127	185	5.3%
46 - 50	7	0	1	0	8	0	5	27	38	32	43	59	12	27	39	32	51	59	110	3.2%
51 - 55	1	0	0	0	1	0	7	13	17	23	24	36	8	13	17	23	25	36	61	1.8%
56 - 59	0	1	0	0	0	1	3	8	9	5	12	13	3	9	9	5	12	14	26	0.8%
60 PLUS	0	0	1	0	1	0	8	12	9	5	17	17	8	12	10	5	18	17	35	1.0%

TOTAL COUNT: 3464

NUMBER OF OCCURENCES OF INVALID DATA: 210

Information not reported

SEX CODE ERRORS 0000
DAY / EVENING ERRORS 0000
SEMESTER HOUR ERRORS 0000
BIRTH DATE ERRORS 0210

43

HARFORD COMMUNITY COLLEGE
AGE DISTRIBUTION
FALL 1979 09/29/79

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AGE	FULL-TIME DAY M	FULL-TIME DAY F	FULL-TIME EVE M	FULL-TIME EVE F	FULL-TIME TOT M	FULL-TIME TOT F	PART-TIME DAY M	PART-TIME DAY F	PART-TIME EVE M	PART-TIME EVE F	PART-TIME TOT M	PART-TIME TOT F	COMBINED DAY M	COMBINED DAY F	COMBINED EVE M	COMBINED EVE F	COMBINED TOT M	COMBINED TOT F	GRAND TOTAL	PERCENT OF TOTAL COUNT
UNDER 18	48	54	0	1	48	55	12	22	13	17	25	39	60	76	13	18	73	94	167	4.2%
18	163	227	1	1	164	228	26	48	15	38	41	86	185	275	16	39	205	314	519	13.1%
19	110	123	4	2	114	125	24	31	32	38	56	69	134	154	36	40	170	194	364	9.2%
20	58	63	0	2	58	65	18	33	41	36	59	69	76	96	41	38	117	184	251	6.3%
21 - 25	76	99	4	1	80	100	85	137	173	203	258	340	161	236	177	204	338	440	778	19.7%
26 - 30	25	41	4	1	29	42	62	105	159	178	221	283	87	146	163	179	250	325	575	14.5%
31 - 35	11	27	4	0	15	27	29	124	134	169	163	293	40	151	138	169	178	326	498	12.4%
36 - 40	5	18	2	0	7	18	14	84	80	126	94	210	19	102	82	126	101	228	329	8.3%
41 - 45	4	9	1	0	5	9	7	42	67	83	74	125	11	51	68	83	79	134	213	5.4%
46 - 50	5	7	1	0	6	7	8	27	36	49	44	76	13	34	37	49	50	83	133	3.4%
51 - 55	1	1	0	0	1	1	8	7	14	24	22	31	9	8	14	24	23	32	55	1.4%
56 - 59	0	1	0	0	0	1	3	9	8	10	11	19	3	10	8	10	11	20	31	0.8%
60 PLUS	1	1	0	0	1	1	6	9	16	7	22	16	7	10	16	7	23	17	40	1.0%

TOTAL ENROLLMENT 3953

NUMBER OF OCCURENCES OF INVALID DATA: 20
(BIRTH DATE)

HARFORD COMMUNITY COLLEGE
AGE DISTRIBUTION
FALL 1980 09/24/80

M10550

AGE	FULL-TIME DAY M	DAY F	EVE M	EVE F	TOT M	TOT F	PART-TIME DAY M	DAY F	EVE M	EVE F	TOT M	TOT F	COMBINED DAY M	DAY F	EVE M	EVE F	TOT M	TOT F	GRAND TOTAL	PERCENT OF TOTAL COUNT
UNDER 18	49	65	1	2	50	67	19	31	15	15	34	46	68	96	16	17	84	113	197	4.7%
18	187	200	1	0	188	200	36	39	30	31	66	70	223	239	31	31	254	270	524	12.5%
19	146	168	5	1	151	169	33	49	35	38	68	87	179	217	40	39	219	256	475	11.4%
20	58	58	0	1	58	59	25	39	27	44	52	83	83	97	27	45	110	142	252	6.0%
21 - 25	66	98	2	3	68	101	69	135	190	197	259	332	135	233	192	200	327	433	760	18.2%
26 - 30	22	52	3	1	25	53	54	126	141	188	195	314	76	178	144	189	220	367	587	14.0%
31 - 35	9	34	1	0	10	34	34	137	126	187	160	324	43	171	127	187	170	358	528	12.6%
36 - 40	9	22	2	0	11	22	9	90	57	144	66	234	18	112	59	144	77	256	333	8.0%
41 - 45	5	8	2	0	7	8	5	53	62	74	67	127	10	61	64	74	74	135	209	5.0%
46 - 50	3	6	0	0	3	6	13	34	38	46	51	80	16	40	38	46	54	86	140	3.3%
51 - 55	1	0	0	0	1	0	8	12	26	28	34	40	9	12	26	28	35	40	75	1.8%
56 - 59	1	0	0	0	1	0	3	7	10	13	13	20	4	7	10	13	14	20	34	0.8%
60 PLUS	2	1	1	0	3	1	11	14	19	18	30	32	13	15	20	18	33	33	66	1.6%

TOTAL COUNT: 4180

NUMBER OF OCCURENCES OF INVALID DATA: 0

HARFORD COMMUNITY COLLEGE
AGE DISTRIBUTION
FALL 1981 10/02/81

AGE	FULL-TIME DAY M	FULL-TIME DAY F	FULL-TIME EVE M	FULL-TIME EVE F	FULL-TIME TOT M	FULL-TIME TOT F	PART-TIME DAY M	PART-TIME DAY F	PART-TIME EVE M	PART-TIME EVE F	PART-TIME TOT M	PART-TIME TOT F	COMBINED DAY M	COMBINED DAY F	COMBINED EVE M	COMBINED EVE F	COMBINED TOT M	COMBINED TOT F	GRAND TOTAL	PERCENT OF TOTAL COUNT
UNDER 18	34	47	0	0	34	47	15	26	13	15	28	41	49	73	13	15	62	88	150	3.4%
18	199	202	1	1	200	203	35	55	23	32	58	87	234	257	24	33	258	290	548	12.4%
19	161	152	1	1	162	153	32	49	29	43	61	92	193	201	30	44	223	245	468	10.6%
20	83	75	3	1	86	76	51	47	30	53	81	100	134	122	33	54	167	176	343	7.8%
21 - 25	73	85	2	3	75	88	88	134	196	201	284	335	161	219	198	204	359	423	782	17.8%
26 - 30	23	57	0	0	23	57	59	135	155	203	214	338	82	192	155	203	237	395	632	14.4%
31 - 35	11	35	1	0	12	35	38	134	145	234	183	368	49	169	146	234	195	403	598	13.6%
36 - 40	6	18	1	1	7	19	16	114	76	126	92	240	22	132	77	127	99	259	358	8.1%
41 - 45	0	8	1	0	1	8	2	57	52	91	54	148	2	65	53	91	55	156	211	4.8%
46 - 50	3	2	1	0	4	2	7	30	38	48	45	78	10	32	39	48	49	80	129	2.9%
51 - 55	1	1	1	0	2	1	6	24	23	38	29	62	7	25	24	38	31	63	94	2.1%
56 - 59	0	0	0	0	0	0	2	5	10	8	12	13	2	5	10	8	12	13	25	0.6%
60 PLUS	1	0	0	0	1	0	7	19	22	16	29	35	8	19	22	16	30	35	65	1.5%

TOTAL COUNT: 4403

NUMBER OF OCCURENCES OF INVALID DATA: 32

SEX CODE ERRORS 0027
DAY / EVENING ERRORS 0000
SEMESTER HOUR ERRORS 0000
BIRTH DATE ERRORS 0005

MARYLAND
DEPARTMENT OF STATE PLANNING
301 W. PRESTON STREET
BALTIMORE, MARYLAND 21201

HARRY HUGHES
GOVERNOR

CONSTANCE LIEDER
SECRETARY

MEMORANDUM

To: Users of Interim Projections by Age, Race and Sex

From: Michel A. Lettre, Director, Office of Planning Data MAL
Arthur Benjamin, Chief of Research AB

Subject: Enclosed Projections

Date: July 31, 1981

Introduction

The enclosed projections by age, race, and sex cohorts have been prepared by the Office of Planning Data using the interim population projections for each subdivision of the State. The interim subdivision projections were released in our memorandum of June 15, 1981. These projections replace all previous ones released by this Department including the preliminary projections released on December 10, 1981.

The projections use the Census Bureau's 1980 final counts of population and recently released State level census counts on age, race, and sex of the population. When more detailed census information on the age, sex, and race of each political subdivision's population is released, a new set of projections will be developed. We anticipate that such revisions will not be published before the Spring of 1982.

The age, race and sex projections are controlled to county totals projected to the year 2000. The county projections of total population are developed independently. They are essentially judgemental being based upon county anticipations concerning future development and a careful examination of recent past trends in population change by the Planning Data Office.

Each Maryland county was asked to assist in determining its future level of population growth and these levels were related to a State-wide population control total. The State-wide control total is a baseline population projection recently released by the Commerce Department's Bureau of Economic Analysis (BEA). The BEA State projections were developed by that agency through the use of a model which relates regional change in economic growth to demographic variables.* Prior to scaling each of the county projections to the State-wide control total, the BEA projection was adjusted for the 1980 final census count. In addition, a variance of +1% in 1985 and 1990 and +2.5% in 2000 was added to the projected population.

Base Population Data

The interim population projections are based on Office of Planning Data estimates of the 1980 population by age, race and sex for each political subdivision of the State.

* For additional information, see "Regional and State Projections of Income, Employment and Population to the Year 2000", Survey of Current Business, November 1980.

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OFFICE OF STATE PLANNING DATA

The 1980 Census population counts by age, race and sex for the State's subdivisions are not scheduled to be released by the Census Bureau until 1981. To obtain the interim 1980 population estimates, the following available data bases were used:

1. An experimental file developed by the Census Bureau for the National Cancer Institute (NCI) which provides estimates of the population by age, race and sex for all counties in the State and Baltimore City for the period 1970-1978;

2. Provisional 1980 Census data received from the Bureau in an unpublished format showing State level population by age, race and sex; and

3. Final 1980 Census population counts by race for the counties and Baltimore City (PHC80-V-22)

The procedure used to derive the interim 1980 estimates of each subdivision's population by age, race and sex met the following criteria:

1. For a given subdivision, the sum of the population over the appropriate age and sex groupings equaled the final 1980 Census subdivision population counts by race (PHC80-V-22); and

2. The sum of the age, race and sex specific populations over all the subdivisions of the State equaled the provisional 1980 Census data on State level population by age, race and sex.

To obtain the estimates of the subdivision population consistent with the above two criteria, the following steps were taken:

1. The NCI experimental file on subdivision population by age, race and sex for 1978 was survived to 1980 using the cohort-component method. The resulting survived population provided preliminary age, race and sex population counts for 1980 controlled to total 1980 Census population counts for the respective subdivisions and the State as a whole;

2. The State-wide NCI population estimates for 1980 were compared to the provisional 1980 Census counts on State level population by age, race and sex. While the NCI 1980 population estimates conformed reasonably well to the 1980 Census age distribution, the NCI estimates of population by race significantly underestimated the 1980 non-white population;

3. Using the NCI 1980 estimates for each political subdivision of population by race and sex along with the 1980 Census population figures on race for the political subdivision and race and sex for the State level, estimates of population by sex for the white and non-white populations were made for each subdivision. The resulting estimates by sex and race were made such that the sum of the male and female populations equaled the 1980 Census counts for population by race for each subdivision (PHC80-V-22). In addition, the sum over all subdivisions by sex and race equaled the 1980 Census counts for the State.

4. Finally, the NCI 1980 estimates of population by age, race and sex for each political subdivision were used along with the 1980 estimates of subdivision population by race and sex (from step 3) and the 1980 Census counts for State level population by age, race and sex to derive 1980 subdivision population estimates. The resulting subdivision population estimates for 1980 conformed to the two criteria listed previously.

While the resulting 1980 population estimates by age, race and sex for each of the political subdivisions will differ from the counts ultimately released by the Bureau based on the 1980 Census, they do represent a significantly improved estimate from that provided by simply surviving the NCI file to 1980.

Fertility Data and Assumptions

Age and race specific fertility rates for each county were developed using 1978 data on the number of females in the childbearing ages and the number of births by age and race of mother.* Age and race specific rates for each political subdivision were projected by five year periods by applying the expected percent changes in age-specific rates for the United States. Series II was used for the white population and the Series I assumption was used for the non-white population. The Series II assumption (2.1 average number of lifetime births per woman) appeared to be tracking better for whites than Series I or III at the national level. Despite an assumed degree of convergence of black and white fertility levels, Series I tracked better than Series II in projecting the national black population. Therefore, Series I (2.7) was selected for non-white fertility.

Mortality Data and Assumptions

Five year age, race and sex specific survival rates were calculated from 1978 life tables for the United States for white males and females and non-white males and females.* For purposes of these projections, the survival rates were assumed to remain constant throughout the projection period.

Migration Data and Assumptions

Five year age, race and sex specific migration rates were calculated for each political subdivision for the period 1973-1978.* These rates were derived from the NCI file by surviving the 1973 population to 1978 based on births and deaths only. This resulted in a closed population, i.e. one in which migration has not occurred. The closed population for 1978 was then subtracted from the actual 1978 population with the difference for each age, race and sex group representing net migration. The age, race and sex specific migration rates were then calculated by dividing the net migration for each group by the closed population for that same group.

Special Population Data and Assumptions

Certain identifiable groups within the population deviate significantly from the character of the population as a whole. The one such group found in Maryland for which limited data is currently available is the military population. Since the change in this population is related to different factors then that causing change in the rest of the population, this group needs to be identified.

* Tables showing all rates are available upon request.

Estimates for the 1978 military population by age, race and sex for each subdivision were made based on 1970 military population figures and changes in each subdivision's population between 1978 and 1990. For purposes of these projections the 1978 estimates of military population by political subdivision were assured to remain constant over the projection period.

Population Projection Methodology

A cohort-component technique was used to prepare the projections. This method of population projection permits the separate determination of the three components of population change - births, deaths and net migration for each age, race and sex group. The method requires base year five (5) year cohort detail typically obtained from a decennial census. Since Census data on age, race and sex of each political subdivision's population is not currently available for 1980, the interim 1980 population estimates (as described in the section on Base Population Data) were used. The approach used to develop the age, race and sex specific population projections for each political subdivision is described below.

First, the estimates of military population were subtracted from the 1980 interim population estimates to derive the estimated civilian population. The 1980 estimated civilian population for each age, race and sex group was survived to 1985 using the fertility and survival rates described previously. This resulted in a closed civilian population for 1985, i.e. one in which migration had not been accounted for. To the civilian 1985 population was added back the military population to obtain a total closed population.

The closed population was compared to the independently projected 1985 control total for the subdivision's population. The difference between the control and the closed populations represented the anticipated net migration. Net migration figures were determined for each of the four race (white and non-white) and sex (male and female) combinations. An average net migration rate was then calculated by dividing the total race and sex specific net migration figure by the projected closed population.

This net migration rate was compared to the average historical net migration rate calculated for the period 1973-1978. The ratio of the average projected migration rate to the average historical net migration rate was calculated. This ratio represented a migration adjustment factor and was multiplied by the historical age specific migration rates (i.e. those calculated for 1973-1978) to derive estimated age specific migration rates for the period 1980-1985. The age specific migration rates for each of the four race and sex combinations were multiplied times the 1985 closed population figures to derive the preliminary projected 1985 population counts by age, race and sex.*

* In a few instances the procedure described above for distributing the net migration was altered slightly. In those jurisdictions with small non-white populations (i.e. less than 500 non-white males or females or less than 30 non-whites males or females in a given five (5) year age cohort) the overall migration rate was assumed constant over all age cohorts. In addition, in those few instances where the migration adjustment factor (i.e. ratio of average projected migration rate to the average historical migration rate) was a large number, then the adjustment factor was set at a value that would not unduly alter or distort the historical migration rates.

The total preliminary 1985 projected population for each race and sex combination was compared to the independently projected 1985 control totals. The difference between the two populations represented the revised migration adjustment needed to make the 1985 projection equal the control totals. The revised migration adjustment was distributed among the age groups for each race and sex combination and a revised 1985 projected population was calculated.

The resulting population by age, race and sex represented the final projection for 1985. This procedure was then repeated in a similar manner to derive the age, race and sex specific population projections for 1990, 1995 and 2000 respectively.

MAL:AB:mv

Enclosure

HARFORD COUNTY

DSP INTERIM POPULATION PROJECTIONS
BY AGE, RACE AND SEX
1980-2000

TOTAL POPULATION

	1995				2000			
	MALE	FEMALE	TOTAL	PERCENT DIST.	MALE	FEMALE	TOTAL	PERCENT DIST.
0-4	6647	6072	12719	7.35	5680	5280	10960	6.23
5-9	6543	5856	12399	7.17	6574	5956	12530	7.12
10-14	6564	5772	12336	7.13	6514	5849	12363	7.02
15-19	5845	5211	11056	6.39	6890	5781	12671	7.20
20-24	7456	6046	13502	7.80	7062	5131	12193	6.93
25-29	7583	7227	14810	8.56	6402	5814	12216	6.94
30-34	8496	7647	16143	9.33	7302	7125	14427	8.20
35-39	5685	6172	11857	6.85	8308	7525	15833	9.00
40-44	5865	6196	12061	6.97	5397	6111	11508	6.54
45-49	6560	6846	13406	7.75	5599	6054	11653	6.62
50-54	5498	5700	11198	6.47	6263	6703	12966	7.37
55-59	4230	4303	8533	4.93	5132	5543	10675	6.07
60-64	3181	3382	6563	3.79	3839	4095	7934	4.51
65-69	2730	3118	5848	3.38	2766	3137	5903	3.35
70-74	1969	2800	4769	2.76	2205	2793	4998	2.84
75-79	1171	1733	2904	1.68	1418	2345	3763	2.14
80-84	621	1059	1680	.97	713	1249	1962	1.11
85+	345	872	1217	.70	425	1020	1445	.82
TOTAL	86989	86012	173001	100.00	88489	87511	176000	100.00

PROJECTIONS PREPARED BY MARYLAND DEPARTMENT OF STATE PLANNING
MARCH, 1982

APPENDIX D

Methodological Note

As often is the case, a number of data massages were necessary to conduct this study. The various manipulations were based on reasonable statistical assumptions and are detailed below:

(1) The population values between the five-year projections were interpolated by assuming equal intervals.

(2) The population totals were projected back to 1978 from 1980 by assuming the same annual change as from 1980-1990.

(3) The age cohort group 17-19 was extrapolated from the Department of State Planning category 15-19 by taking 60 percent of the total.

(4) The Registrar Reports and Census Data age cohorts did not match exactly.

Census	Registrar Reports
17-19	under 18-19
20-24	20-25
25-29	26-30
30-34	31-35
35-39	36-40
40-over	41-over

Differences were assumed to be equally distributed.

(5) Missing data for age cohort groups in the Registrar Reports was added back into the totals proportionally to existing data keeping the total N constant.

Number of Missing Data Cases	
1978	210
1979	20
1980	0
1981	32

(6) FTE projections were based on data generated on a different date than the Registrar Reports. The overall credit average for part-time students was identical at 4.8, but the overall credit load for full-time students was slightly lower--13.74 compared to 13.8.

(7) FTE projections for an entire year were based upon the proportion of Fall 1981 FTE's to the total FTE's for FY 1982. The Fall to Year Credit Multiplier used was 2.114434.

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